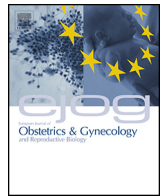




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Correspondence

Covid-19 during pregnancy: A case series from an universally tested population from the north of Portugal



Dear Editor,

The case series published so far are quite heterogeneous [1–3]. Some series occurred during the beginning of the pandemic, when the disease was largely unknown, others occurred during the peak of mortality and fear of disease spread among the community and healthcare professionals; some series pertained to symptomatic women in settings where testing was only performed in cases with moderate to severe symptoms and others also to asymptomatic women in settings where large scale testing had been done; some cases were uneventful, others had poor outcome.

We report a case series from an universally tested population from Hospital Pedro Hispano, located in the most affected region of Portugal with COVID-19 [4].

From March 25 to April 15, all the 103 pregnant women admitted to our department were tested for SARS-CoV-2. Twelve cases (11,7 %) were positive, 11 of which were asymptomatic. From

these, 10 had delivered by now, 6 by cesarean section and 4 vaginally. Gestational ages, 5 min Apgar scores and newborn weights ranged between 37–41 weeks, 9–10 and 2350–3380 g, respectively. Eight cases had mild fetal growth restriction and there was one delivery of twins. There were no maternal complications and all the newborns tested negative (Table 1).

Our series shows that most cases are asymptomatic. Not surprisingly, the prognosis was good in all our cases, as women had minimal or no signs of disease. Apparently, there is no relation between COVID-19 and our growth restricted fetuses, having in mind the chronology of the events.

At the time of our first delivery, Portugal had decided to follow the most restrictive guidelines ultimately developed by Chinese experts [4,5]. The country was warned by the Italian and Spanish situations, where a devastating pandemic had started two weeks before and universal testing in hospital admissions was decided to allow early diagnosis and identification of potential spreaders of the disease.

It is not yet known what is the best strategy to address COVID-19 during pregnancy and labor. However, it is quite clear that we do need to consider not only epidemiological and clinical factors, but also organizational, social and political issues. Last but not least, universal testing of all the admitted pregnant women is an unique

Table 1

Summary of maternal characteristics, symptoms and delivery details of pregnant women with SARS-Cov-2 infection. Abbreviations: SARS-Cov-2, severe acute respiratory syndrome coronavirus 2; RT-PCR, reverse transcription polymerase chain reaction.

Patient	Age	Gestational age at diagnosis (weeks)	Maternal comorbid conditions	Symptoms	Mode of delivery	Fetus Weight (grams), Apgar score (1 min/5 min)	Neonatal SARS-Cov-2 rt-PCR	Observations
1	22	35	None	No	–	–	–	Fetal Growth Restriction
2	41	30	Ulcerative colitis, Psoriasis (chronic corticotherapy)	No	–	–	–	Preterm Premature Rupture of Membranes.
3	36	37	Severe Scoliosis, Behçet Syndrome	Headache	Cesarean	2350 g, 9/10	Negative	Fetal Growth Restriction
4	38	39	None	No	Cesarean	2480 g, 9/10	Negative	Gestational Diabetes, Fetal Growth Restriction
5	27	41	None	No	Cesarean	3380 g, 9/10	Negative	
6	32	37	None	No	Vaginal	2600 g, 8/9	Negative	Gestational Hypertension
7	33	40	Severe myopia	No	Cesarean	2670 g, 9/10	Negative	Fetal Growth Restriction
8	34	40	None	No	Vaginal	2795 g, 9/10	Negative	Fetal Growth Restriction
9	35	37	Asthma, Raynaud Syndrome	No	Vaginal	2410 g, 9/10	Negative	Fetal Growth Restriction
10	27	39	None	No	Vaginal	3220 g, 9/10	Negative	
11	29	38	Chronic Hypertension	No	Cesarean	2580 g, 9/10	Negative	Fetal Growth Restriction
12	29	37	None	No	Cesarean	2370, 9/10 2745 g, 9/10	Negative Negative	Dichorionic Diamniotic Pregnancy Fetal growth discordance

opportunity to have an idea of the prevalence among the population (11,7 % in our series).

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

- [1] Zaigham M, Andersson O. Maternal and perinatal outcomes with COVID-19: a systematic review of 108 pregnancies. *Acta Obstet Gynecol Scand* 2020(April), doi:<http://dx.doi.org/10.1111/aogs.13867> [Epub ahead of print].
- [2] Ferrazzi EM, Frigerio L, Cetin I, et al. COVID-19 obstetrics task force, Lombardy, Italy: executive management summary and short report of outcome. *Int J Gynaecol Obstet* 2020(April), doi:<http://dx.doi.org/10.1002/ijgo.13162>.
- [3] Sutton D, Fuchs K, D'Alton M, Goffman D. Universal screening for SARS-CoV-2 in women admitted for delivery. *N Engl J Med* 2020(April), doi:<http://dx.doi.org/10.1056/NEJMc2009316>.
- [4] Direção Geral de Saúde. COVID-19. Ponto de situação atual em Portugal. 2020. . (Accessed 10 April 2020) <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>.
- [5] Chen D, Yang H, Cao Y, et al. Expert consensus for managing pregnant women and neonates born to mothers with suspected or confirmed novel coronavirus (COVID-19) infection. *Int J Gynaecol Obstet* 2020(March), doi:<http://dx.doi.org/10.1002/ijgo.13146> [Epub ahead of print].

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Received 17 April 2020